

In re the Application of:
Alan C. Wendt et al.
Application No. 10/810,787
Response to Office Action of April 25, 2007

REMARKS

Claims 1-4, 7-11, 14-19, 22-28 and 31-62 are pending.

Claims 1, 9, 17 and 25 have been amended to recite the surface of the fibrous material viewed from an environmental area is intended to be an aesthetically pleasing surface as supported at Paragraph [00022].

Claims 1, 9, 17 and 25 have been amended to recite the second face is not viewable from the environmental area when installed in the structure as supported at paragraph [00022].

Claims 1, 9, 17 and 25 have been amended to emphasize the panel is designed to resist fire spread and smoke development as supported at Paragraph [0004].

Claims 1, 5 and 6 have been combined and Claims 5 and 6 cancelled.

Claims 9, 12 and 13 have been combined and Claims 12 and 13 cancelled.

Claims 17, 20 and 21 have been combined and Claims 20 and 21 cancelled.

Claims 25, 29 and 30 have been combined and Claims 29 and 30 cancelled.

Claim 43 has been amended to delete the informality "of a material selected from the group consisting of" to be consistent with the form of Claim 44.

Claims 47-50 are amended to recite the panel substrate is made of metal and depend from new Claims 55-58.

New Claims 51-54 are supported by the disclosure of opaque substrates such as metal, wood and gypsum at page 4.

Claims 55-58 are supported by FIG. 2 and its description in the paragraphs [00020] and [00021]. Their recitation of non-woven fibrous material extending upwardly along the flanges is shown in FIG. 2. Paragraph [00022] describes the fibrous facer material 54 of FIG. 2.

Claims 59-62 recites spacing between the panels of zero to about 3/8 inch as supported at paragraph [00027].

It is respectfully submitted no new matter is presented by the above amendments.

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I. Claim Objections

Claim 43 has been objected to for reciting “of a material selected from the group consisting of metal.” Applicants thank the Examiner for treating this as reading like claim 44 “of metal”. Claim 43 has been amended to delete this objected to recitation, consistent with the form of Claim 44. Applicants therefore request the objection to Claim 43 be withdrawn.

II. 35 USC §102(b)

A. Claims 1, 2, 7, 9-10, 14, 17-18, 22, 25-26, 31 and 34-38

Claims 1, 2, 7, 9-10, 14, 17-18, 22, 25-26, 31 and 34-38 have been rejected under 35 USC §102(b) as being anticipated by Baruch (US Patent 3,253,675). The Office action has cited Baruch with respect to Claim 1 for disclosure of a durable sound absorbing panel having surface burning resistance qualities for use in a structure having an environmental area when installed.

Claims 1, 5 and 6 were combined; Claims 9, 12 and 13 were combined; Claims 17, 20 and 21 were combined; and Claims 25, 29 and 30 were combined. Thus, this rejection is moot.

III. 35 USC §103

A. Claims 5-6, 11-13, 19-21, 29-30, 33, 39-42 and 47-50

Claims 5-6, 11-13, 19-21, 29-30, 33, 39-42, and 47-50 have been rejected under 35 USC §103(a) as being unpatentable over Baruch.

As mentioned above, Claims 1, 5 and 6 were combined; Claims 9, 12 and 13 were combined; Claims 17, 20 and 21 were combined; and Claims 25, 29 and 30 were combined. Thus, the following remarks assume Claims 1, 9, 17 and 25 are rejected for the same reasons as were respective pairs of Claims 5-6, 12-13, 20-21 and 29-30.

1. Claims 1, 9, 17 and 25

Baruch does not disclose or suggest a panel that resists fire spread and smoke development as recited by Claims 1, 9, 17 and 25. Moreover, there is no teaching or suggestion in Baruch that would lead one of ordinary skill in the relevant art, at the time the invention was

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made, to modify the panels in Baruch to give a ceiling panel that resists fire spread and smoke development.

Moreover, it is respectfully submitted it is not obvious optimization to achieve the selected airflow rate resistance ranges of Claims 1, 9, 17 and 25. Without undue experimentation one skilled in the art would not appreciate the relationship between airflow resistance and efficiency of the acoustic attenuation. As explained at page 9, the airflow resistance of the fibrous facer material in combination with the perforated panel substrate is critical to the efficiency of the acoustic attenuation.

2. Dependent Claims Further Distinguish Over Baruch

It is also respectfully submitted it is not obvious optimization to recite the aperture dimensions of Claims 4, 11, 19 and 28. As explained at the sentence bridging pages 7 and 8, for the panel to achieve the desired sound deadening qualities, the diameters of the apertures in the panel are from about 0.039 to about 0.117 inches. It is respectfully submitted this would not be determined by one of ordinary skill in the art at the time this application was filed without undue experimentation.

Claims 7, 14, 22 and 31 recite the panel has flanges for connection to a suspended ceiling grid. Baruch is relied upon for the use of a ceiling panel having a flange for connection to a suspended ceiling grid wherein suspended ceiling grid includes a plurality of grid members interconnected to form panel openings, the grid members being suspended from the structure with hangers. Applicants have reviewed Baruch, including the portion recited in the Office Action, for the teaching of the use of a flange. Applicants can not find any teaching or suggestion for the use of a flange in Baruch. No disclosure can be found in Baruch including the referenced Figure 5 and Column 4, lines 45-65, for use of a flange. Thus, Applicants respectfully seek clarification as to which feature in Baruch is being relied upon for the alleged disclosure of this flange feature of Claims 7, 14, 22 and 31.

In regard to Claims 39-42, there is no selection in Baruch of polycarbonate to achieve the smoke development and fire spread resistant properties of the claimed ceiling panels.

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In regard to Claims 47-50, there is no selection in Baruch of polyester, nylon6 or polyethylene to achieve the smoke development and fire spread resistant properties of the claimed ceiling panels. The selection of a combination of polymer non-woven layer with the panel having upwardly extending flanges (of base Claims 55-58) has unexpected advantages. As explained at page 9, lines 6-12, certain materials such as fiberglass tear or crack when the panel is molded to have flanges. In contrast, polymer mixtures of fibrous materials permit passage of airflow and allow the panel to be shaped after the fibrous material has been adhered to the panel without tearing the fibrous face material.

New Claims 51-54 further distinguish over Baruch by reciting the panel substrate is opaque. It is respectfully submitted Baruch desires a light-transmitting panel. Baruch, col. 1, lines 62-70 states, "An object of the present invention, therefore, is to provide a light-transmitting acoustically absorbent device.... In summary, the present invention resides, from the broadest point of view, in a relatively rigid light-transmitting member having openings covered by preferably light-transmitting sound-absorbing material." It is respectfully submitted this imputes a requirement for light-transmissivity into Baruch.

Claims 55-58 further distinguish over Baruch by reciting the panel has upwardly extending flanges for connection to a suspended ceiling grid. It is respectfully submitted, there is no teaching or suggestion in Baruch that its panels are intended for use in a system wherein a non-woven decorative layer would be disposed to be nearly completely exposed to the environment through use of a horizontal grid with the panels having upwardly extending flanges for connection to the suspended ceiling grid. Moreover, these claims further distinguish over Baruch by reciting the non-woven fiber extends along the upwardly extending flanges.

Claims 59-62 further distinguish over Baruch by reciting spacing between the panels of zero to about 3/8 inch. As explained at paragraph [00027], spacing between the panels larger than 3/8 inch permits excessive sound to be deflected off of the grids 12 and back into the room, reducing the effectiveness of the ceiling system. Moreover, the narrow spacing, coupled with upwardly extending flanges of base Claims 55-62 aids to hide the grid from view.

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B. Claims 3, 8, 15-16, 23-24 and 32

Claims 3, 8, 15-16, 23-24 and 32 have been rejected under 35 USC §103(a) as being unpatentable over Baruch in view of Cortonesi et al (US 5,942,736).

Cortonesi et al is relied upon for the disclosure of the use of three size groups of apertures (figure 1) on a highway or railroad traffic noise barrier, to make up for the deficiency in Baruch et al to teach the use of various size of apertures for absorption of various frequencies of incoming sound.

It is respectfully submitted the teaching of Cortonesi et al does not make up for the deficiencies of Baruch as discussed above to teach the novel and unobvious properties of the ceiling panel in independent claims 1, 9, 17 and 25 from which the claims depend.

C. Claims 43-46

Claims 43-46 have been rejected under 35 USC §103(a) as unpatentable over Baruch in view of Brown et al (US 4,487,794). Brown et al is cited in the Office Action to show the use of a perforate metal substrate (element 12 in figure 1) in which "the sound incident side of the panel is covered by a fibrous material".

The Office action's asserts the metal panel of Brown et al may be employed in the "instance of transmission of light not being a consideration."

It is respectfully submitted Baruch desires a light-transmitting panel. Baruch, col. 1, lines 62-70 states, "An object of the present invention, therefore, is to provide a light-transmitting acoustically absorbent device... . In summary, the present invention resides, from the broadest point of view, in a relatively rigid light-transmitting member having openings covered by preferably light-transmitting sound-absorbing material." It is respectfully submitted this imputes a requirement for light-transmissivity into Baruch. Brown et al's metal panel would make Baruch inoperative for achieving this purpose.

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MPEP 2143.01, part V states,

"If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (Claimed device was a blood filter assembly for use during medical procedures wherein both the inlet and outlet for the blood were located at the bottom end of the filter assembly, and wherein a gas vent was present at the top of the filter assembly. The prior art reference taught a liquid strainer for removing dirt and water from gasoline and other light oils wherein the inlet and outlet were at the top of the device, and wherein a pet-cock (stopcock) was located at the bottom of the device for periodically removing the collected dirt and water. The reference further taught that the separation is assisted by gravity. The Board concluded the claims were *prima facie* obvious, reasoning that it would have been obvious to turn the reference device upside down. The court reversed, finding that if the prior art device was turned upside down it would be inoperable for its intended purpose because the gasoline to be filtered would be trapped at the top, the water and heavier oils sought to be separated would flow out of the outlet instead of the purified gasoline, and the screen would become clogged.).

The perforate metal panel in Brown et al is used as a sound barrier for aircraft engines. It is not intended to function as a ceiling panel for use in designing a ceiling panel for use in a suspended ceiling system.

Claims 47-50 further distinguish over the references. Brown et al requires a layer of perforate metal adhesively bonded to a layer of porous fibrous metal of a different type (see Abstract). Substituting a polyester, nylon6 or polyethylene polymer non-woven fiber layer for the layer of porous fibrous metal of different type would render Brown inoperative for its intended purpose. Moreover, the selection of a combination of metal substrate and polymer non-

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woven layer with the panel having upwardly extending flanges has unexpected advantages. As mentioned above, and explained at page 9, lines 6-12 of the present application, certain materials such as fiberglass tear or crack when the panel is molded to have flanges. In contrast, polymer mixtures of fibrous materials permit passage of airflow and allow the panel to be shaped after the fibrous material has been adhered to the panel without tearing the fibrous face material.

IV. Conclusion

It is respectfully submitted all objections and/or rejections are overcome. Thus, a Notice of Allowance is respectfully requested.

Please charge any fee deficiencies or credit any overpayments to Deposit Account No 10-4375.

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